



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Chase A. Hafner et al.

Group Art Unit: 2162

Examiner: D. Champagne

Serial No.: 09/421,038

Filed: July 3, 2002

For: METHOD FOR MANAGING INFORMATION AND
RENDERING DISCOUNTS

Attorney Docket No.: 1668 (USW 0535 PUS)

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Appeal
Brief
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TRANSMITTAL LETTER

Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

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Sir:

This is in response to the Office communication mailed September 3, 2002. The Examiner has indicated that the appeal brief was not filed with the appropriate three copies attached as required under 37 C.F.R. § 1.192(a). Enclosed are three additional copies of the appeal brief which was originally mailed on July 3, 2002.

Respectfully submitted,

Chase A. Hafner et al.

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Date: September 20, 2002

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Jeremy J. Curcuri
Signature



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In re application of:

CHASE A. HAFNER et al.

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Serial No.: 09/421,038

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AND RENDERING DISCOUNTS

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APPEAL BRIEF

Box AF
Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Sir:

This is an appeal brief in support of an appeal from the final rejection of claims 1-19 in the final office action dated March 29, 2002. The notice of appeal was mailed on July 1, 2002.

I. REAL PARTY IN INTEREST

The real party in interest is Qwest Communications International Inc. US West, Inc. merged with Qwest Communications International Inc. The original assignment to US West, Inc. is recorded on reel/frame 010334/0877.

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

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Jeremy J. Curcuri
Name of Person Signing

Jeremy J. Curcuri
Signature

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to the present appeal.

III. STATUS OF CLAIMS

Claims 1-19 are pending in this application. Claims 1-19 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

After final rejection, a response was filed on May 23, 2002. The response did not amend the claims. An advisory action was mailed on May 30, 2002 maintaining the final rejection.

V. SUMMARY OF THE INVENTION

Applicants' invention relates to a method for managing information and rendering discounts in a billing system. Page 1, ll. 4-5. Customer bills are often adjusted by various discounts. In an existing method for rendering discounts, a complex application specific software package is developed to render discounts in a particular billing system having a highly defined structure. Page 1, ll. 13-15. The application specific software package is tailored to meet the needs of a single company for which the software package is developed. As such, in an existing method for rendering discounts, it is not feasible to change the way in which discounts are rendered very often because the software package is so application specific that it is sometimes necessary to develop an entire new application specific software package in order to revise the discount rendering technique. Page 1, ll. 13-24.

Applicants have recognized the problems associated with these existing complex application specific software packages developed for rendering discounts in billing systems. Applicants' claimed invention provides an improved method for managing information and rendering discounts in a billing system that utilizes a rule based engine configured to accumulate data and render discounts.

Claim 1 recites a method 320 for managing information and rendering discounts in a billing system. The method 320 comprises receiving 322 a customer record including data, establishing 324 a rule based accumulation engine 14, and processing 326 the record. The record is processed with the accumulation engine 14 to accumulate the data in a plurality of predetermined target accumulators. The method 320 further comprises establishing 328 a rule based discount engine 30, and processing 330 the plurality of target accumulators. The plurality of target accumulators are processed with the discount engine 30 to render discounts applicable to the customer. Page 2, ll. 8-15; p. 6, ll. 10-23; p. 26, ll. 18-25.

Claim 2 recites that the record has a record type and establishing the accumulation engine 14 further comprises establishing a rules table 70 that directs the accumulation engine 14 based on the record type. Page 2, ll. 16-18; p. 7, ll. 8-19; pp. 8-12.

Claim 3 recites that establishing the accumulation engine 14 further comprises establishing at least one rule for processing a record by performing a sequence of operations to the data. The rules table 70 directs the accumulation engine 14 to apply the at least one rule when dictated by the record type. Page 2, ll. 18-21; p. 12, l. 17 - p. 18, l. 28.

Claim 4 recites that establishing the accumulation engine 14 further comprises establishing at least one function for processing a record. The rules table 70 directs the accumulation engine 14 to apply the at least one function when dictated by the record type. Page 2, ll. 21-24; p. 18, l. 29 - p. 21, l. 6.

Claim 5 recites that the rules table 70 directs the accumulation engine 14 to pass the data directly to a target accumulator when dictated by the record type. Page 2, ll. 24-25; p. 21, ll. 7-19.

Claim 6 recites that the record includes at least one source field. Receiving the record further comprises assigning a logical name 64 to a source field 62. The accumulation engine 14 processes the record using the logical name 64. Page 2, l. 26 - p. 3, l. 3; p. 7, ll. 4-8; p. 12, ll. 2-14.

Claim 7 recites that establishing the discount engine 30 further comprises establishing at least one rule 136, 140 for processing the record to evaluate discount qualification. At least one rule 134, 138 is established for processing the record to evaluate discount application. Page 3, ll. 4-7. Claim 8 recites that establishing the discount engine 30 further comprises establishing at least one simple rule 134, 136 for processing the record. Page 3, ll. 7-8. Claim 9 recites that establishing the discount engine 30 further comprises establishing at least one compound rule 138, 140 for processing the record, the at least one compound rule 138, 140 being composed of a plurality of simple rules 134, 136. The discount engine 30 applies a compound rule 138, 140 by recursively applying simple rules 134, 136. Page 3, ll. 8-12. Simple rules are also illustrated at 106, 108, 110, 114, 116. Compound rules are also illustrated at 102, 104, 112. Establishing the discount engine is further described at p. 21, l. 20 - p. 23, l. 9.

Claim 10 recites a discount system for managing information and rendering discounts in a billing system. The discount system 10 comprises a rule based engine 12, 312 configured to receive a customer record 310 including data, process the record to accumulate the data in a plurality of predetermined target accumulators, process the plurality of target accumulators to render discounts applicable to the customer 314. Page 3, ll. 13-19; p. 6, ll. 10-23; p. 26, ll. 5-17.

Claim 11 recites a computer readable storage medium having information stored thereon representing instructions executable by a computer to manage information and render discounts in a billing system. The computer readable storage medium further comprises instructions for receiving 322 a customer record including data, instructions for establishing 324 a rule-based accumulation engine 14, and instructions for processing 326 the record with the accumulation engine 14 to accumulate the data in a plurality of predetermined target accumulators. The medium further comprises instructions for establishing 328 a rule-based discount engine 30, and instructions for processing 330 the plurality of target accumulators with the discount engine 30 to render discounts applicable to the customer. Page 3, ll. 20-30; p. 26, l. 26 - p. 27, l. 4; p. 6, ll. 10-23; p. 26, ll. 18-25.

Claim 12 recites that the record has a record type and the medium further comprises instructions for establishing a rules table 70 that directs the accumulation engine 14 based on the record type. Page 4, ll. 1-3; p. 7, ll. 8-19; pp. 8-12.

Claim 13 recites instructions for establishing at least one rule for processing a record by performing a sequence of operations to the data. The rules table 70 directs the accumulation engine 14 to apply the at least one rule when dictated by the record type. Page 4, ll. 1-3; p. 12, l. 17 - p. 18, l. 28.

Claim 14 recites instructions for establishing at least one function for processing a record. The rules table 70 directs the accumulation engine 14 to apply the at least one function when dictated by the record type. Page 4, ll. 1-3; p. 18, l. 29 - p. 21, l. 6.

Claim 15 recites that the rules table 70 directs the accumulation engine 14 to pass the data directly to a target accumulator when dictated by the record type. Page 4, ll. 1-3; p. 21, ll. 7-19.

Claim 16 recites that the record includes at least one source field, and the medium further comprises instructions for assigning a logical name 64 to a source field 62. The accumulation engine 14 processes the record using the logical name 64. Page 4, ll. 3-4; p. 7, ll. 4-8; p. 12, ll. 2-14.

Claim 17 recites instructions for establishing at least one rule 136, 140 for processing the record to evaluate discount qualification, and instructions for establishing at least one rule 134, 138 for processing the record to evaluate discount application. Page 4, ll. 4-7. Claim 18 recites instructions for establishing at least one simple rule 134, 136 for processing the record. Page 4, ll. 4-7. Claim 19 recites instructions for establishing at least one compound rule 138, 140 for processing the record. The at least one compound rule 138, 140 is composed of a plurality of simple rules 134, 136. The discount engine 30 applies a compound rule 138, 140 by recursively applying simple rules 134, 136. Page 4, ll. 4-7. Simple rules are also illustrated at 106, 108, 110, 114, 116. Compound rules are also illustrated at 102, 104, 112. Establishing the discount engine is further described at p. 21, l. 20 - p. 23, l. 9.

VI. ISSUES

Whether claims 1, 10, and 11 are anticipated under 35 U.S.C. § 102(e) by Benyacar et al. (U.S. Patent No. 5,003,584).

Whether claims 1-4, 6-14, and 16-19 are anticipated under 35 U.S.C. § 102(e) by Jagadish et al. (U.S. Patent No. 5,915,006).

Whether claims 5 and 15 are unpatentable under 35 U.S.C. § 103(a) over Jagadish et al.

VII. GROUPING OF CLAIMS

Claims 1-4, 7-14, and 17-19 stand or fall together. Claims 6 and 16 stand or fall together. Claims 5 and 15 stand or fall together.

VIII. ARGUMENT

1. Claims 1, 10, and 11 - 37 C.F.R. § 102(e) (Anticipation By Benyacar)

Before addressing the art based rejections, applicants comment on claim interpretation for purposes of examination. The Examiner is correct in that the terms should be given their broadest reasonable interpretation. M.P.E.P. § 2111. Such an interpretation requires that the claims be given their plain meaning unless they are defined in the specification. M.P.E.P. § 2111.01. However, plain meaning refers to the meaning given to the terms by those of ordinary skill in the art. M.P.E.P. § 2111.01.

Applicants believe that page 2, lines 8-15 of the specification, taken in light of page 1, line 7 - page 2, line 3 (background art), when read by one of ordinary skill in the art does give considerable guidance for the definitions of "rule-based accumulation engine" and "rule-based discount engine." As explained in the background art of the specification, an existing method uses a complex application specific software package developed for a particular billing system of a single company and having a highly defined structure. The software package is so application specific that it is sometimes necessary to develop an entire new software package to revise the discount billing technique. For these reasons, there is a need for a method for managing information and rendering discounts in a billing system that is more easily modified, and may be ported to different platforms without excessive difficulties.

The present invention utilizes, among other elements, a rule-based accumulation engine and a rule-based discount engine. A rule-based system is a non-application specific, configurable, system that processes input data to produce output data wherein the processing is dictated by a set of (configurable) rules such as if-then statements. Rule-based systems are well-known to those skilled in the art and the differences between a complex application specific software package and a rule-based system are well understood to those skilled in the art. In light of this, the meaning given to "rule-based accumulation engine" and "rule-based discount engine" and similar terms by those of ordinary skill in the art is a non-application specific, configurable, system that processes input data to produce output data where the processing is dictated by a set of (configurable) rules such as if-then statements. The meaning expressed immediately above is clearly the plain meaning to one of ordinary skill in the art, and is further reinforced by applicants' specification. Further, although the use of similar terms in subsequent paragraphs is in the context of a preferred embodiment, the uses of these terms are consistent with the meaning expressed above.

Regarding Benyacar (U.S. Patent No. 5,003,584), this patent describes a method and apparatus for the billing of value added communication calls. The described method provides a sponsor realtime access to rate tables to specify call billing parameters needed to rate calls made to a sponsor number (such as a 900 number). A billing number is determined and validated and used to identify the party to receive a billing record for the call. A separate billing record is created for each call to the sponsor's number which includes a sponsor specified charge as determined using the call billing parameters. As explained in col. 10, ll. 44-59, the caller's and the sponsor's bills are generated from the AMA billing record in a well-known manner (ll. 43-45). That is, although Benyacar mentions an AMA billing record and a telephone bill, there is no description or suggestion of the specific discount rendering method recited by independent claim 1. Applicants' claim a specific method for managing information rendering discounts in a billing system comprising, among other steps, processing the customer record with a rule based accumulation engine to accumulate data in a plurality of target accumulators and processing the target accumulators with a rule based

discount engine to render discounts applicable to the customer. The claimed invention utilizes two different rule based engines (accumulation engine and discount engine) to manage information and render discounts in a billing system. Benyacar mentions billing records, but fails to describe or suggest the method recited by independent claim 1.

Applicants note that the Examiner relies on principles of inherency in rejecting claim 1 as anticipated by Benyacar. M.P.E.P. § 2112.02. The Examiner states that Benyacar necessarily performs the claimed method, and directs applicants' attention to col. 10, lines 44-59. Applicants believe that Benyacar does not necessarily perform the claimed method. Specifically, as explained in col. 10, lines 44-59, the callers and the sponsors' bills are generated from the AMA billing record in a well-known manner (lines 43-45). The well-known manner of bill generation used by Benyacar does not necessarily perform the claimed method. For example, the well-known manner of bill generation used by Benyacar could be the existing method for rendering discounts described in the background section of applicants' patent application as opposed to being the method recited by independent claim 1. Because the Benyacar inherent method could be any of a number of bill generation methods, it is inappropriate to reject independent claim 1 as anticipated by Benyacar.

Claim 10 is an independent claim reciting a discount system for managing information and rendering discounts in a billing system. The discount system comprises a rule based engine configured to receive a customer record including data, process the record to accumulate the data in a plurality of predetermined target accumulators, processed the plurality of target accumulators to render discounts applicable to the customer. As explained above with respect to claim 1, the relied upon references fail to describe or suggest a rule based engine in a discount system for managing information and rendering discounts in a billing system. As such, independent claim 10 is also believed to be patentable. Independent claim 11 recites a computer readable storage medium and is believed to be patentable for similar reasons as those given above with respect to claim 1.

2. Claim 1-4, 6-14, and 16-19 - 35 U.S.C. § 103(a)
(Anticipation by Jagadish)

Regarding Jagadish (U.S. Patent No. 5,915,006), Jagadish describes telephone aggregated billing. This patent does describe a method and system in which calls made on two or more phone lines of a customer are aggregated for billing and discount billing plans to which the customer subscribes are applied to the aggregated phone usage of the customer. In col. 4, ll. 35-49, Jagadish mentions applying customer specific parameters to a call, and using automatic number identification (ANI) to determine the identity of the party who initiated the call. However, applicants point out that independent claims 1, 10, and 11 recite specific features for managing information and rendering discounts in a billing system that are not described or suggested by Jagadish.

Claims 2-4, 6-9, 12-14, and 16-19 dependent claims and are also believed to be patentable.

Claims 6 and 16 are believed to recite additional patentable subject matter by reciting assigning a logical name to a source field, wherein the accumulation engine processes the record using the logical name. Regarding claims 6 and 16, the Examiner has directed applicants' attention to Jagadish, col. 4, ll. 47-54. This portion of Jagadish describes automatic number identification (ANI) and fails to describe or suggest the claimed assigning of a logical name to a source field. As such, claims 6 and 16 are believed to be patentable for these additional reasons in addition to being patentable for their dependency.

3. Claims 5 and 15 - 35 U.S.C. § 103(a)
(Unpatentable Over Jagadish)

Claims 5 and 15 are dependent claims and are also believed to be patentable.

IX. SUMMARY

In applying both of the applied references, the Examiner had pointed out general teachings of processing billing records and rendering discounts. However, both of the relied upon references fail to specifically describe or suggest the claimed invention as recited in the claims.


The Examiner has interpreted the claims inconsistently with the broadest reasonable interpretation by those of ordinary skill in the art. To those of ordinary skill in the art, the terms of the claims have a plain meaning, a rule-based system is a non-application specific, configurable, system that processes input data to produce output data where the processing is dictated by a set of (configurable) rules such as if-then statements. This meaning is clear to those of ordinary skill in the art, and is reinforced by page 2, lines 8-15 of the specification taken in light of page 1, line 7 - page 2, line 3 (background art). Further, additional uses of similar terms in the application, although in the context of preferred embodiments, are consistent with the plain meaning asserted by applicants. The Examiner has given an unreasonable claim interpretation that is not consistent with M.P.E.P. § 2111 and then rejected the claims based on general teachings of processing billing records and rendering discounts shown in Benyacar and Jagadish. Applicants also believe that the inherency rejections are clearly inappropriate because there are many different ways to generate discounts and applicants' claims define a specific technique of generating discounts.

For reasons discussed above, it is respectfully submitted that claims 1-19 are patentable. The final rejection of claims 1-19 should be reversed.

The fee of \$320 as applicable under the provisions of 37 C.F.R. § 1.17(c) is enclosed. Please charge any additional fee or credit any overpayment in connection with this filing to our deposit account No. 02-3978.

Respectfully submitted,

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Enclosure - Appendix



X. APPENDIX - CLAIMS ON APPEAL

1. A method for managing information and rendering discounts in a billing system, the method comprising:

- receiving a customer record including data;
- establishing a rule-based accumulation engine;
- processing the record with the accumulation engine to accumulate the data in a plurality of predetermined target accumulators;
- establishing a rule-based discount engine; and
- processing the plurality of target accumulators with the discount engine to render discounts applicable to the customer.

2. The method of claim 1 wherein the record has a record type and wherein establishing the accumulation engine further comprises:

- establishing a rules table that directs the accumulation engine based on the record type.

3. The method of claim 2 wherein establishing the accumulation engine further comprises:

- establishing at least one rule for processing a record by performing a sequence of operations to the data, wherein the rules table directs the accumulation engine to apply the at least one rule when dictated by the record type.

4. The method of claim 3 wherein establishing the accumulation engine further comprises:

- establishing at least one function for processing a record, wherein the rules table directs the accumulation engine to apply the at least one function when dictated by the record type.

5. The method of claim 3 wherein the rules table directs the accumulation engine to pass the data directly to a target accumulator when dictated by the record type.

6. The method of claim 1 wherein the record includes at least one source field, and wherein receiving the record further comprises:

assigning a logical name to a source field, wherein the accumulation engine processes the record using the logical name.

7. The method of claim 1 wherein establishing the discount engine further comprises:

establishing at least one rule for processing the record to evaluate discount qualification; and

establishing at least one rule for processing the record to evaluate discount application.

8. The method of claim 1 wherein establishing the discount engine further comprises:

establishing at least one simple rule for processing the record.

9. The method of claim 8 wherein establishing the discount engine further comprises:

establishing at least one compound rule for processing the record, the at least one compound rule being composed of a plurality of simple rules, wherein the discount engine applies a compound rule by recursively applying simple rules.

10. A discount system for managing information and rendering discounts in a billing system, the discount system comprising:

a rule-based engine configured to receive a customer record including data, process the record to accumulate the data in a plurality of predetermined target accumulators, process the plurality of target accumulators to render discounts applicable to the customer.

11. A computer readable storage medium having information stored thereon representing instructions executable by a computer to manage information and render discounts in a billing system, the computer readable storage medium further comprising:

instructions for receiving a customer record including data;

instructions for establishing a rule-based accumulation engine;

instructions for processing the record with the accumulation engine to accumulate the data in a plurality of predetermined target accumulators;

instructions for establishing a rule-based discount engine; and

instructions for processing the plurality of target accumulators with the discount engine to render discounts applicable to the customer.

12. The medium of claim 11 wherein the record has a record type and wherein the medium further comprises:

instructions for establishing a rules table that directs the accumulation engine based on the record type.

13. The medium of claim 12 further comprising:

instructions for establishing at least one rule for processing a record by performing a sequence of operations to the data, wherein the rules table directs the accumulation engine to apply the at least one rule when dictated by the record type.

14. The medium of claim 13 further comprising:

instructions for establishing at least one function for processing a record, wherein the rules table directs the accumulation engine to apply the at least one function when dictated by the record type.

15. The medium of claim 13 wherein the rules table directs the accumulation engine to pass the data directly to a target accumulator when dictated by the record type.

16. The medium of claim 11 wherein the record includes at least one source field, and wherein the medium further comprises:

instructions for assigning a logical name to a source field, wherein the accumulation engine processes the record using the logical name.

17. The medium of claim 11 further comprising:

instructions for establishing at least one rule for processing the record to evaluate discount qualification; and

instructions for establishing at least one rule for processing the record to evaluate discount application.

18. The medium of claim 11 further comprising:

instructions for establishing at least one simple rule for processing the record.

19. The medium of claim 18 further comprising:

instructions for establishing at least one compound rule for processing the record, the at least one compound rule being composed of a plurality of simple rules, wherein the discount engine applies a compound rule by recursively applying simple rules.